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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/712,654 | 11/14/2000 | Ramesh Gupta | ECB-0010 | 4644 |

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EXAMINER

RIDLEY, BASIA ANNA

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1764

DATE MAILED: 06/03/2003

18

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/712,654

Applicant(s)

GUPTA ET AL.

Examiner

Basia Ridley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-12 and 14-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-12 and 14-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claim(s) 9-12 and 14-20 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Beal et al. (USP 3,607,000) in view of Gupta (USP 4,313,908).

Regarding claim(s) 9, 12 and 16, Beal et al. disclose(s) a similar method for extending operating life of a fixed bed reactor comprising:

- (a) placing a bypass apparatus (Fig. 7) within at least one fixed catalyst bed in substantial alignment with flow of feedstock;
- said bypass apparatus comprising a cage member (84) comprising a first elongated hollow member having a top wall, side walls and a bottom wall, said cage member (84) having openings therein; and
- a second hollow elongated member (72) for bypassing an increasing amount of said feedstock through said second hollow elongated member (72) into said cage member (84) as top layer of said at least one fixed bed fouls to create a bypass flow, said second hollow elongated member (72) being disposed within said cage member (84) and protruding through said top wall of said cage member (84) and wherein said second hollow elongated member (72) extends above said at least one fixed catalyst bed through said cage member (84), said second hollow elongated member (72) being sized to regulate said bypass flow, said cage member (84) having a substantially larger cross-section than said second hollow elongated member (72) so that said bypass flow exits said cage member (84) into said bottom layer of said at least one fixed catalyst bed at an effectively reduced

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velocity;

- (b) introducing said feedstock into said at least one fixed bed of catalytic material, wherein a majority of said feedstock will flow through said top layer of said at least one fixed bed of catalytic material (C13/L31-C16/L13); and
- (c) as said top layer of said at least one fixed bed of catalytic material fouls, bypassing said increasing amount of said feedstock to said bottom layer of said at least one fixed bed of catalytic material (C13/L31-C16/L13).

Beal et al. does not explicitly disclose the method wherein said second hollow elongated member is continuously opened to said bypass flow, nor does he disclose specific pressure drop for said member.

Gupta teaches a reactor comprising bypass apparatus, wherein said bypass apparatus comprises second hollow elongated member, and wherein:

- said second hollow elongated member, wherein said second hollow elongated member is continuously opened to said bypass flow and has a pressure drop of about 5 to about 50 times greater than that of said top layer of said catalyst bed when said catalyst bed is a fresh catalyst bed (C3/L47-C4/L13).

Said reactor is an improvement of a reactor comprising bypass apparatus, wherein said bypass apparatus comprises a rupture disk. It allows for a low pressure drop bypass and several fold increase in on-time of the reactor, and at the same time increases system reliability over bypass systems comprising a rupture disk (C1/L45-59).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to replace second hollow elongated member comprising a rupture disk in reactor of Beal et al., with a second hollow elongated member having a pressure drop of about 5 to about 50 times

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greater than that of top layer of said catalyst bed when said catalyst bed is a fresh catalyst bed as taught by Gupta, for the purpose of providing a low pressure drop bypass and several fold increase in on-time of the reactor, and increasing system reliability.

Regarding claim(s) 10-11 and 17-20, Beal et al. in view of Gupta disclose(s) all of the claim limitations as set forth above, additionally Beal et al. discloses the method for operating a fixed bed reactor, wherein:

- said feedstock is selected from the group consisting of liquid feed, vapor feed and mixtures thereof (C1/L2-6);
- said feedstock is selected from the group consisting of hydrocarbon feedstocks, chemical feedstocks, and mixtures thereof (C1/L2-6);
- the bypass apparatus (Fig. 7) further comprises a separation device (76) disposed above said second hollow elongated member (72);
- the bypass apparatus (Fig. 7) further comprises a separation device (76) selected from the group consisting of caps, centrifugal separators and cyclones (Fig. 7);
- said fixed catalyst bed contains packing material for distributing particulates passing through said bypass apparatus (Fig. 7); and
- said packing material is selected from the group consisting of catalyst particles, alumina balls, inert particles, inert packing and mixtures thereof (Fig. 7).

Regarding claim(s) 14-15, Beal et al. in view of Gupta disclose(s) all of the claim limitations as set forth above, but does not recited explicitly the specific diameters of the first and second members.

The specific diameters of the members are not considered to confer patentability to the claims. The precise diameters of the members would have been considered a result effective

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variable by one of ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed diameters of the members cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have routinely optimized the diameters of the members in the apparatus of Beal et al. to obtain desired bypassing of the top layer of the fixed catalyst bed (*In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Response to Arguments

4. Applicant's arguments filed on 19 March 2003 have been fully considered but they are not persuasive.

5. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

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6. The applicant argues that the cage member of the present invention is substantially different from Beal's cage member (i.e. wire mesh element). The only difference that the applicant points out is the fact that the cage member of Beal is filled with large packing material such as alumina balls, while the present invention uses a cage member that is free of any packing material. In response the examiner would like to point out that the rejected claim(s) does/do not exclude cage members further comprising packing material, as the claimed transitional term "comprising" permits the inclusion of other steps, elements, or materials, including both, those disclosed but not claimed by applicant and those neither disclosed nor contemplated by applicant. See *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 802 (CCPA 1981).

Further the examiner notes that at the features upon which applicant relies (i.e., cage member that is free of any packing material) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

7. The applicant argues that Beal reference requires presence of a closure means inside the bypass apparatus, while instant claims exclude such closure means. In response the examiner notes that Beal was not relied upon to teach a bypass apparatus which excludes such closure means.

Gupta teaches a reactor comprising bypass apparatus, wherein said bypass apparatus comprises second hollow elongated member, and wherein:

- said second hollow elongated member, wherein said second hollow elongated member is continuously opened to said bypass flow and has a pressure drop of about 5 to about 50 times greater than that of said top layer of said catalyst bed when said catalyst bed is a fresh catalyst bed (C3/L47-C4/L13).

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Said reactor is an improvement of a reactor comprising bypass apparatus, wherein said bypass apparatus comprises a rupture disk. It allows for a low pressure drop bypass and several fold increase in on-time of the reactor, and at the same time increases system reliability over bypass systems comprising a rupture disk (C1/L45-59).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to replace second hollow elongated member comprising a rupture disk in reactor of Beal et al., with a second hollow elongated member having a pressure drop of about 5 to about 50 times greater than that of top layer of said catalyst bed when said catalyst bed is a fresh catalyst bed as taught by Gupta, for the purpose of providing a low pressure drop bypass and several fold increase in on-time of the reactor, and increasing system reliability.

8. The applicant argues that Gupta teaches the use of bypass tubes having different lengths, while the bypass apparatus of the present invention comprises tubes of equal length. In response the examiner would like to point out that the rejected claim(s) does/do not exclude bypass tubes having different lengths, as the claimed transitional term “comprising” permits the inclusion of other steps, elements, or materials, including both, those disclosed but not claimed by applicant and those neither disclosed nor contemplated by applicant. See *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 802 (CCPA 1981).

Further the examiner notes that at the features upon which applicant relies (i.e., bypass tubes having equal lengths) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Even further the examiner notes that Beal discloses a bypass apparatus wherein the bypass tubes have equal lengths (see Fig. 7).

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Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

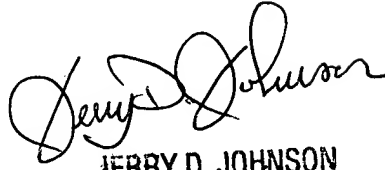
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Basia Ridley, whose telephone number is (703) 305-5418. The examiner can normally be reached on Monday through Thursday, from 8:30 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola, can be reached on (703) 308-6824.

The fax phone number for Group 1700 is (703) 872-9311 (for Official papers after Final), (703) 872-9310 (for other Official papers) and (703) 305-6078 (for Unofficial papers). When filing a fax in Group 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are not for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.


Basia Ridley
Examiner
Art Unit 1764


JERRY D. JOHNSON
PRIMARY EXAMINER
GROUP 1100

BR
May 28, 2003